

include viewing, analysis, acquisition, inspection or other use of an image by eyes or machines. The terms optical and optics are intended to pertain to all particle or electromagnetic radiation pertaining to images, rather than to just the common meaning associated with visible light. The term image is meant to include all the various forms of the image, for example the image on the film, the image as projected on the Sense CCD array, the image as projected on the projection screen, the image being recorded, the image stored as electronic information and the image on the recording sensor. Image, depending on the context, may refer to a virtual image, an image on a recording medium such as electrons with a memory, film or tape, emulsion, ink, chemicals or other particles on a base such as film or paper. The word image is to be interpreted with breadth unless specifically defined as pertaining to a particular form. It will also be understood that while the words element, device and circuit may sometimes carry with them some implication of optical, mechanical, or electrical embodiments, it is well known in the art that they have broader meanings. For example, an element is not just an element of an optical lens, but may also be a mechanical, electrical or fluid element. As used herein, location is intended to refer to a particular position in space. Image is used herein as commonly used in the art as a spatial distribution of a physical property, such as radiation, electric charge, conductivity or reflectivity, mapped from another distribution of either the same or another physical property. This definition fits for example the view of a light emitting or light reflecting object, or a radiation image as focused or projected on a plane in space in a virtual or real sense. It may be noted that a beam of light which carries an image does not fit this definition unless it is focused to the extent where it takes on a spatial distribution which is mapped from another distribution.

Although the description of the preferred embodiment of the invention is made herein with a certain degree of particularity, it is understood that the present disclosure of the preferred form has been made only by way of example and that numerous changes in the details of construction and the combination and arrangement of parts may be resorted to without departing from the spirit and the scope of the invention as hereinafter claimed.

What is claimed is:

1. Apparatus for positionally stabilizing an image conveyed via a first conveyance path from an image source location and focused onto a first surface at a first location said apparatus including:

- a) sensing circuitry located at a second location and responsive to said image at said second location to sense the position of said image, said sensing circuitry providing an electronic signal conveying errors in the position of said image due to gate weave in at least one dimension,
- b) and an electromechanical mechanism responsive to said electronic signal to provide a variable mechanical force, said force operable to alter said first conveyance path of said image at a third location in order to improve the positional stability of said image at said first location.

2. Apparatus for spatially positioning an image consisting of electromagnetic radiation within a range of wavelengths which radiation is conveyed along a first conveyance path and projected on a first surface at a first location said image being further conveyed by at least one other radiation at a wavelength outside of said range which other radiation is conveyed along a second conveyance path which may include part or all of said first conveyance path, said apparatus including:

a) a sensing device responsive to said other radiation for sensing gate weave related to said image and to output a signal in response thereto and;

b) a correcting device operating in response to said signal to alter said first conveyance path in order to improve the positional accuracy of said image at said first location.

3. Apparatus as claimed in claim 1 or 2 wherein said sensing of a) takes place at a second location and said altering of b) alters the conveyance of said image at a third location.

4. Apparatus as claimed in claim 1 or 2 wherein said apparatus alters the conveyance of said image at a third location in said first conveyance path in a fashion which does not interfere with the projection of the image on said first surface in order that said image may be stabilized during such projection.

5. Apparatus as claimed in claim 1 or 2 wherein said sensing in a) senses the spatial position of said image at a first time followed by altering the spatial position of said image in b) at a second time.

6. Apparatus as claimed in claim 1 or 2 wherein said image at said first location is intended for viewing by a viewer; said sensing in a) senses the spatial position of said image as conveyed in wavelengths invisible to said viewer and said altering in b) corrects the spatial position of said image as conveyed at wavelengths visible to said viewer.

7. Apparatus as claimed in claim 1 or 2 wherein said sensing in a) operates to senses the spatial position including at least rotation of said image at said second location and said altering of b) alters the spatial position including at least rotation of said image.

8. Apparatus as claimed in claim 1 or 2 wherein said image is intended for viewing by a viewer and said sensing in a) senses the spatial position of said image at a first time before said image is viewed and said altering of b) corrects the spatial position of said image at a second time after said sensing and before viewing of the image.

9. Apparatus as claimed in claim 1 or 2 wherein said projection of said image at said first location includes time sequential projection of frames of said image on said first surface, each frame being readied for projection in a first time period during which there is no visible projection followed by a second time period in which the preceding readied frame is visibly projected, with said sensing of a) operative to sense the spatial position of said image after said image becomes stable during the latter portion of said first time period, and said altering of b) correcting the spatial position of said image thereafter.

10. Apparatus for projecting an image along a conveyance path to a first surface, which apparatus operates to sequentially project frames of said image with the projection of each said frame including a plurality of time periods;

including a sensing element responsive to said projected frame during a first time period during which there is no visible projection of said image, said sensing element operating to sense the spatial position of said projected frame;

and a correcting element responsive to said sensing element and operative to alter the spatial position of said projected frame before a second time period which includes visibly projecting said image.

11. Apparatus as claimed in claim 1, 2 or 10 wherein said apparatus operates to change the spatial position of said image on said first surface by tilting a transmissive flat element located in said conveyance path by varying the electric signal applied to at least two electromechanical